

Advantageously, a plurality of nozzles are provided, which are separated by the periphery of the overflow collar, in order to provide a uniform fluid flow on the outer periphery of a substrate carrier.

With a further preferred embodiment of the present invention, at least one outlet is provided in the overflow collar to drain off the treatment fluid from the overflow collar before a drying process of the substrate and/or substrate carrier. Preferably, a tank, which is surrounded by the base, is provided to catch the treatment fluid.

Preferably, the device has a substrate carrier and a unit for conducting a fluid, especially a rinsing fluid in contact with an outer side of a substrate carrier for cleaning purposes.

The above-mentioned problem is also resolved through the method of the present invention for processing substrates, especially semi-conductor wafers, in which a fluid is applied at a right angle onto a surface of a substrate to be treated, via at least one first nozzle arranged substantially concentric to the substrate, so that the fluid applied on the substrate turns around in a radial flow, and a fluid via a plurality of separately controlled second nozzles, transverse to the radial flow, is applied to the surface of the substrate to be treated. This process has the same advantages as the above-described inventive device, in particular, an acceleration of the treatment process and a reduction of consumption of the processing fluid.

Preferred forms of the method are provided in the dependent method claims, in which the same advantages as set forth above are defined.

The preferred form of the present invention will be described next with reference to the figures. They show:

- Fig. 1 a schematic sectional view of the processing device of the present invention along the line B-B of Fig. 2;
- Fig. 2 a cross sectional view of the processing device of the present invention along the line A-A of Fig. 1;
- Fig. 3 a schematic plan view of the processing device of the present invention;
- Fig. 4 an enlarged detail view of a cut through a nozzle along the line C-C of Fig. 3;
- Fig. 5 a cross sectional view similar to Fig. 2 of an alternative embodiment of the present invention; and
- Fig. 6 a cross sectional view of an alternative embodiment of the processing device of the present invention.

The invention will be explained first with reference to Figures 1 through 4, which show a first embodiment of the invention. Fig. 2 shows a cross sectional view of a rinsing and drying device 1 of the present invention. Above the rinsing and drying device 1, a substrate carrier 3, holding a semi-conductor wafer 2, is disposed. The substrate carrier 3 comprises an upper portion 5 and a ring-shaped lower portion

6, whereby the wafer is clamped between the upper portion 5 and the lower portion 6.

In order to avoid repetition, reference is made to the description of the substrate carrier 3 provided in the application with the Application Number 198 59 467 and the title "Substrate Carrier" filed by the same applicant on the same day as the present application, in so far as the subject matter of the present invention corresponds to this other application.

The rinsing and drying device 1 has a base 10. The base 10 has an annular member 11. On an upper surface of the annular member, three depressions 12 with respective bores are provided. The depressions 12, as well as the bores, receive adjustment screws 13, which project into openings of the lower portion 6 of the substrate carrier 3. Through the adjustment screws 13, the height and alignment of the rinsing and drying device 1 can be adjusted and also changed. Changing the height is advisable, for example, in order to provide for the different spacing and distances used for the drying and rinsing processes. In this regard, it should be noted that a wafer lying on the lower portion 6 of the substrate carrier 3 does not come into contact with other elements of the rinsing and drying device, when the lower portion 6 rests on the adjustment screws 13. Instead of adjustment screws 13, adjustable cylinders, spindles or the like could also be used.